Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the present application.

Listing of Claims:

1. (Currently amended) A drive circuit, comprising:

a plurality of digital-to-analog conversion circuits each of which selects one of ~~different~~ difference reference voltages corresponding ~~according~~ to a digital gradation signal ~~and inserts resistors with resistance values corresponding to said gradation signal into a plurality of circuits connecting the selected reference voltages with a first output terminal or a second output terminal~~; and

a sampling circuit which connects each ~~said first~~ output terminal of two of the digital-to-analog conversion circuits to ~~a plurality of~~ signal lines selectively ~~one by one in response to a signal line selection signal synchronized with said gradation signal and connects said second output terminal to said plurality of signal lines one by one in response to said signal line selection signal~~,

~~wherein when said sampling circuit selects signal lines, the reference voltage selected by one of said digital-to-analog conversion circuits and/or the reference voltage selected by the other of said digital-to-analog conversion circuits are output to said signal lines via the resistor inserted into any of said circuits and a resistance within said sampling circuit~~

wherein the digital-to-analog conversion circuit between the selected reference voltage and the output terminal of the digital-to-analog conversion circuit includes a variable resistor circuit with a resistance value corresponding to a digital

gradation signal; and

wherein the sampling circuit outputs a predetermined voltage by connecting an output voltage terminal of the plurality of digital-to-analog conversion circuits to one of the signal lines or by connecting two output terminals of the plurality of signal lines to one of the signal lines together.

2. (Currently amended) A drive circuit, comprising:

a plurality of digital-to-analog conversion circuits each of which selects one of difference reference voltages corresponding ~~consists of a plurality of circuits containing a plurality of switching elements with conduction resistances different from one another and connecting different reference voltages with a first output terminal or a second output terminal and in which specified switching elements conduct according~~ to a digital gradation signal; ~~and~~

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a plurality of switching element groups including a plurality of switching elements which are connected to each other in parallel, wherein each of which has a difference resistance value in active, connects to a corresponding output terminal of the digital-to-analog conversion circuit and is controlled according to a digital gradation signal; and

a sampling circuit which connects each output terminal of two of a plurality of switching element groups to a plurality of signal lines selectively ~~has a first group of sampling switching elements inserted between said first output terminal and a plurality of signal lines and a second group of sampling switching elements inserted between said second output terminal and said plurality of signal lines~~,

wherein the sampling circuit outputs a predetermined voltage by connecting an output voltage terminal of the plurality of digital-to-analog conversion circuits to

one of the signal lines or by connecting two output terminals of the signal lines together ~~said first group of sampling switching elements and said second group of sampling switching elements start to conduct one by one in response to a signal line selection signal synchronized with said gradation signal, and consequently the reference voltages connected to specified switching elements belonging to one of said digital-to-analog conversion circuits and/or the reference voltages connected to specified switching elements belonging to the other of said digital-to-analog conversion circuits are output to said signal lines via specified conducting switching elements, and wherein said sampling switching elements divide any reference voltages as they are being output~~.

3. (Currently amended) A drive circuit, comprising:

a plurality of digital-to-analog conversion circuits each of which connects ~~selects~~ one of difference ~~different~~ reference voltages ~~according~~ corresponding to a digital gradation signal; and

~~a plurality of variable resistor circuits which generate resistance values corresponding to said gradation signal into a plurality of circuits connecting the reference voltages selected by said digital-to-analog conversion circuits with a first output terminal or a second output terminal; and~~

a sampling circuit which connects each ~~said first~~ output terminal of two of a plurality of variable resistor circuits to one of a plurality ~~to a plurality of signal lines one by one in response to a signal line selection signal synchronized with said gradation signal and connects said second output terminal to said plurality~~ of signal lines selectively ~~one by one in response to said signal line selection signal~~,

~~wherein when said sampling circuit selects signal lines, the reference voltage selected by one of said digital-to-analog conversion circuits and/or the reference voltage~~

~~selected by the other of said digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits and a resistance within said sampling circuit~~

wherein each output terminal of the digital-to-analog conversion circuits connects to a corresponding variable resistor circuit with a resistance value corresponding to a digital gradation signal, and

wherein the sampling circuit outputs a predetermined voltage by connecting an output voltage terminal of the plurality of digital-to-analog conversion circuits to one of the signal lines or by connecting two output terminals of the plurality of signal lines to one of the signal lines together.

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4. (Currently amended) A drive circuit, comprising:

a plurality of ~~variable resistor circuits which generate resistance values corresponding to a digital gradation signal into a plurality of circuits connecting one of a plurality of~~ digital-to-analog conversion circuits each of which outputs an analog signal corresponding to a digital gradation signal ~~with a first output terminal and into a plurality of circuits connecting the other of the plurality of digital-to-analog conversion circuits with a second output terminal, said plurality of digital-to-analog conversion circuits outputting an analog voltage by converting it into different reference voltages according to said digital gradation signal~~; and

a sampling circuit which connects each output terminal of two of a plurality of variable resistor circuits to selectively a corresponding one of a ~~has a first group of sampling switching elements inserted between said first output terminal and a plurality of signal lines and a second group of sampling switching elements inserted between said second output terminal and said~~ plurality of signal lines,

~~wherein said first group of sampling switching elements and said second group of sampling switching elements start to conduct one by one in response to a signal line selection signal synchronized with said gradation signal and select the signal lines, and as a result of the signal line selection by said sampling circuit, the reference voltages outputted from one of said digital-to-analog conversion circuits and/or the reference voltages outputted from the other of said digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits, and wherein said sampling switching elements divide any reference voltages as they are being output~~

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wherein each output terminal of the digital-to-analog conversion circuit connects to a corresponding variable resistor circuit with a resistance value corresponding to a digital gradation signal, and

wherein the sampling circuit outputs a predetermined voltage by connecting an output voltage terminal of the plurality of digital-to-analog conversion circuits to one of the signal lines or by connecting two output terminals of the plurality of signal lines to one of the signal lines together.

5. (Previously presented) The drive circuit according to claim 3, wherein said plurality of variable resistor circuits include switching elements which conduct according to said gradation signal as the resistors with resistance values corresponding to said gradation signal.

6. (Previously presented) The drive circuit according to claim 4, wherein said plurality of variable resistor circuits include switching elements which conduct according to said gradation signal as the resistors with resistance values corresponding to said gradation signal.

7. (Previously presented) The drive circuit according to claim 3, wherein said plurality of variable resistor circuits include switching elements which conduct according to said gradation signal and resistance elements, connected in series with each other, as the resistors with resistance values corresponding to said gradation signal.

8. (Previously presented) The drive circuit according to claim 4, wherein said plurality of variable resistor circuits include switching elements which conduct according to said gradation signal and resistance elements, connected in series with each other, as the resistors with resistance values corresponding to said gradation signal.

9. (Currently amended) A drive circuit, comprising:

a plurality of first ~~positive~~ digital-to-analog conversion circuits each of which selects one of difference ~~different~~ positive reference voltages corresponding ~~according~~ to a digital gradation signal ~~and inserts resistors with resistance values corresponding to said gradation signal into a plurality of circuits connecting the selected positive reference voltages with a first positive output terminal or second positive output terminal~~;

a plurality of second ~~negative~~ digital-to-analog conversion circuits each of which selects one of difference ~~different~~ negative reference voltages corresponding ~~according~~ to a digital gradation signal ~~and inserts resistors with resistance values corresponding to said gradation signal into a plurality of circuits connecting the selected negative reference voltages with a first negative output terminal or second negative output terminal~~; and

a ~~positive~~ sampling circuit which connects each ~~said first positive~~ output

terminal of two of the first digital-to-analog conversion circuits and each output terminal of two of the second digital-to-analog conversion circuits to signal lines selectively, ~~to a plurality of signal lines one by one in response to a positive signal line selection signal synchronized with said gradation signal and connects said second positive output terminal to said plurality of signal lines one by one in response to said positive signal line selection signal synchronized with said gradation signal; and~~

~~a negative sampling circuit which connects said first negative output terminal to a plurality of signal lines one by one in response to a negative signal line selection signal synchronized with said gradation signal and connects said second negative output terminal to said plurality of signal lines one by one in response to said negative signal line selection signal,~~

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~~wherein when said positive sampling circuit selects signal lines, the positive reference voltage selected by one of said positive digital-to-analog conversion circuits and/or the positive reference voltage selected by the other of said positive digital-to-analog conversion circuits are output to said signal lines via the resistor inserted into any of said circuits and a resistance within said positive sampling circuit, and~~

~~when said negative sampling circuit selects signal lines, the negative reference voltage selected by one of said negative digital-to-analog conversion circuits and/or the negative reference voltage selected by the other of said negative digital-to-analog conversion circuits are output to said signal lines via the resistor inserted into any of said circuits and a resistance within said negative sampling circuit~~

wherein the first digital-to-analog conversion circuit between the selected positive reference voltage and the output terminal of the digital-to-analog conversion circuit includes a variable resistor circuit with a resistance value corresponding to a digital gradation signal;

wherein the second digital-to-analog conversion circuit between the selected negative reference voltage and the output terminal of the digital-to-analog conversion circuit includes a variable resistor circuit with a resistance value corresponding to a digital gradation signal; and

wherein the sampling circuit outputs a predetermined voltage on the signal line by connecting an output terminal of the first digital-to-analog conversion circuits and the second digital-to-analog conversion circuits to one of the signal lines together, by connecting two output terminals of the first digital-to-analog conversion circuits to one of the signal lines together, or by connecting two output terminals of the second digital-to-analog conversion circuits to one of the signal lines together.

10. (Currently amended) A drive circuit, comprising:

a plurality of first ~~positive~~ digital-to-analog conversion circuits each of which selects one of difference positive voltages corresponding ~~consists of a plurality of circuits containing a plurality of switching elements with conduction resistances different from one another and connecting different positive reference voltages with a first positive output terminal or a second positive output terminal and in which specified switching elements conduct according~~ to a digital gradation signal;

a plurality of first switch element groups including a plurality of switching elements which are connected to each other in parallel, wherein each of which has a difference resistance value in active, connects to a corresponding output terminal of the digital-to-analog conversion circuit and is controlled according to a digital gradation signal;

a plurality of second ~~negative~~ digital-to-analog conversion circuits each of which selects one of difference negative voltage corresponding to ~~consists of a plurality~~

~~of circuits containing a plurality of switching elements with conduction resistances different from one another and connecting different negative reference voltages with a first negative output terminal or a second negative output terminal and in which specified switching elements conduct according to~~ a digital gradation signal;

a plurality of second switch element groups including a plurality of switching elements which are connected to each other in parallel, wherein each of which has a difference resistance value in active, connects to a corresponding output terminal of the digital-to-analog conversion circuit and is controlled according to a digital gradation signal;

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a ~~positive~~ sampling circuit which connects each output terminal of two of the first switching element groups and each output terminal of two of the second switching element groups to signal lines selectively,

wherein the sampling circuit outputs a predetermined voltage by connecting one of the output terminals of the first and the second switching element groups to one of the signal lines, by connecting two output terminals of the first switching element group to one of the lines together, or by connecting two output terminals of the second switching element group to one of the lines together ~~has a first group of positive sampling switching elements inserted between said first positive output terminal and a plurality of signal lines and a second group of positive sampling switching elements inserted between said second positive output terminal and said plurality of signal lines; and~~

~~a negative sampling circuit which has a first group of negative sampling switching elements inserted between said first negative output terminal and a plurality of signal lines and a second group of negative sampling switching elements inserted between said second negative output terminal and said plurality of signal lines,~~

~~wherein said first group of positive sampling switching elements and said second group of positive sampling switching elements start to conduct one by one in response to a signal line selection signal synchronized with said gradation signal, and consequently the positive reference voltages connected to specified switching elements belonging to one of said positive digital-to-analog conversion circuits and/or the positive reference voltages connected to specified switching elements belonging to the other of said positive digital-to-analog conversion circuits are output to said signal lines via specified conducting switching elements, and wherein said positive sampling switching elements divide any reference voltages as they are being output, and~~

~~said first group of negative sampling switching elements and said second group of negative sampling switching elements start to conduct one by one in response to the signal line selection signal synchronized with said gradation signal, and consequently the negative reference voltages connected to specified switching elements belonging to one of said negative digital-to-analog conversion circuits and/or the negative reference voltages connected to specified switching elements belonging to the other of said negative digital-to-analog conversion circuits are output to said signal lines via specified conducting switching elements, and wherein said negative sampling switching elements divide any reference voltages as they are being output~~.

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11. (Currently amended) A drive circuit, comprising:

a plurality of <u>first</u> ~~positive~~ digital-to-analog conversion circuits each of which selects one of <u>difference</u> ~~different~~ positive reference voltages <u>corresponding</u> ~~according~~ to a digital gradation signal;

a plurality of <u>second</u> ~~negative~~ digital-to-analog conversion circuits each of which selects one of <u>difference</u> ~~different~~ negative reference voltages <u>corresponding</u> ~~according~~ to a digital gradation signal; <u>and</u>

~~a plurality of positive variable resistor circuits which generate resistance values corresponding to said gradation signal into a plurality of circuits connecting the positive reference voltages selected by said positive digital-to-analog conversion circuits with a first positive output terminal or a second positive output terminal;~~

~~a plurality of negative variable resistor circuits which generate resistance values corresponding to said gradation signal into a plurality of circuits connecting the negative reference voltages selected by said negative digital-to-analog conversion circuits with a first negative output terminal or second negative output terminal;~~

a ~~positive~~ sampling circuit which connects ~~said first positive~~ each output terminal of two of first variable resistor circuits and each terminal of two of second variable resistor circuits to signal lines selectively, ~~to a plurality of signal lines one by one in response to a positive signal line selection signal synchronized with said gradation signal and connects said second positive output terminal to said plurality of signal lines one by one in response to said positive signal line selection signal; and~~

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~~a negative sampling circuit which connects said first negative output terminal to a plurality of signal lines one by one in response to a negative signal line selection signal synchronized with said gradation signal and connects said second negative output terminal to said plurality of signal lines one by one in response to said negative signal line selection signal,~~

~~wherein when said positive sampling circuit selects signal lines, the positive reference voltage selected by one of said positive digital-to-analog conversion circuits and/or the positive reference voltage selected by the other of said positive digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits and a resistance within said positive sampling circuit, and~~

~~when said negative sampling circuit selects signal lines, the negative~~

~~reference voltage selected by one of said negative digital-to-analog conversion circuits and/or the negative reference voltage selected by the other of said negative digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits and a resistance within said negative sampling circuit~~

wherein each output terminal of the first digital-to-analog conversion circuits connects to a corresponding first variable resistor circuit with a resistance value corresponding to a digital gradation signal;

wherein each output terminal of the second digital-to-analog conversion circuits connects to a corresponding second variable resistor circuit with a resistance value corresponding to a digital gradation signal, and

wherein the sampling circuit outputs a predetermined voltage on the signal line by connecting an output terminal of the first variable resistor circuits and the second variable resistor circuits to one of the signal lines, by connecting two output terminals of the first variable resistor circuits to one of the signal lines together, or by connecting two output terminals of second first variable resistor circuits to one of the signal lines together.

12. (Currently amended) A drive circuit, comprising:

a plurality of first ~~positive variable resistor circuits which generate resistance values corresponding to a digital gradation signal into a plurality of circuits connecting one of a plurality of positive~~ digital-to-analog conversion circuits each of which outputs a positive analog voltage corresponding to a digital gradation signal ~~with a first positive output terminal and into a plurality of circuits connecting the other of the plurality of positive digital-to-analog conversion circuits with a second positive output terminal, said plurality of positive digital-to-analog conversion circuits outputting an analog~~

~~voltage by converting it into different positive reference voltages according to said digital gradation signal~~;

a plurality of second ~~negative variable resistor circuits which generate resistance values corresponding to a digital gradation signal into a plurality of circuits connecting one of a plurality of negative~~ digital-to-analog conversion circuits each of which outputs a negative analog voltage corresponding to a digital gradation signal ~~with a first negative output terminal and into a plurality of circuits connecting the other of the plurality of negative digital-to-analog conversion circuits with a second negative output terminal, said plurality of negative digital-to-analog conversion circuits outputting an analog voltage by converting it into different negative reference voltages according to said digital gradation signal~~; and

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a ~~positive~~ sampling circuit which connects each output terminal of two terminals of a plurality of first variable resistor circuits and two terminals of a plurality of second variable resistor circuits to selectively a corresponding one of signal lines, ~~has a first group of positive sampling switching elements inserted between said first positive output terminal and a plurality of signal lines and a second group of positive sampling switching elements inserted between said second positive output terminal and said plurality of signal lines; and~~

~~a negative sampling circuit which has a first group of negative sampling switching elements inserted between said first negative output terminal and a plurality of signal lines and a second group of negative sampling switching elements inserted between said second negative output terminal and said plurality of signal lines,~~

~~wherein said first group of positive sampling switching elements and said second group of positive sampling switching elements start to conduct one by one in response to a signal line selection signal synchronized with said gradation signal and~~

~~select the signal lines, and as a result of the signal line selection by said positive sampling circuit, the positive reference voltage selected by one of said positive digital-to-analog conversion circuits and/or the positive reference voltage selected by the other of said positive digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits, and wherein said positive sampling switching elements divide any reference voltages as they are being output, and~~

~~said first group of negative sampling switching elements and said second group of negative sampling switching elements start to conduct one by one in response to the signal line selection signal synchronized with said gradation signal and select the signal lines, and as a result of the signal line selection by said negative sampling circuit, the negative reference voltage selected by one of said negative digital-to-analog conversion circuits and/or the negative reference voltage selected by the other of said negative digital-to-analog conversion circuits are output to said signal lines via the resistance generated into any of said circuits, and wherein said sampling switching elements divide any reference voltages as they are being output~~

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wherein each output terminal of the first digital-to-analog conversion circuits connects to a corresponding first variable resistor circuit with a resistance value corresponding to a digital gradation signal,

wherein each output terminal of the second digital-to-analog conversion circuits connects to a corresponding second variable resistor circuit with a resistance value corresponding to a digital gradation signal, and

wherein the sampling circuit outputs a predetermined voltage by connecting an output terminal of the first variable resistor circuits and the second variable resistor circuits to one of the signal lines, by connecting two output terminals of the first variable resistor circuits to one of the signal lines together, or by connecting two output

terminals of second first variable resistor circuits to one of the signal lines together.

13. (Previously presented) The drive circuit according to claim 11, wherein said plurality of positive variable resistor circuits and said plurality of negative variable resistor circuits include switching elements which conduct according to said gradation signal as the resistors with resistance values corresponding to said gradation signal.

14. (Previously presented) The drive circuit according to claim 12, wherein said plurality of positive variable resistor circuits and said plurality of negative variable resistor circuits include switching elements which conduct according to said gradation signal as the resistors with resistance values corresponding to said gradation signal.

15. (Previously presented) The drive circuit according to claim 11, wherein said plurality of positive variable resistor circuits and said plurality of negative variable resistor circuits include switching elements which conduct according to said gradation signal and resistance elements, connected in series with each other, as the resistors with resistance values corresponding to said gradation signal.

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16. (Previously presented) The drive circuit according to claim 12, wherein said plurality of positive variable resistor circuits and said plurality of negative variable resistor circuits include switching elements which conduct according to said gradation signal and resistance elements, connected in series with each other, as the resistors with resistance values corresponding to said gradation signal.

17. (Original) The drive circuit according to claim 2, wherein among the groups of the switching elements belonging to said sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said signal line selection signal.

18. (Original) The drive circuit according to claim 4, wherein among the

groups of the switching elements belonging to said sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said signal line selection signal.

19. (Previously presented) The drive circuit according to claim 10, wherein among the groups of the positive switching elements belonging to said positive sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said positive signal line selection signal and among the groups of the negative switching elements belonging to said negative sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said negative signal line selection signal.

20. (Previously presented) The drive circuit according to claim 12, wherein among the groups of the positive switching elements belonging to said positive sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said positive signal line selection signal and among the groups of the negative switching elements belonging to said negative sampling circuit, a pair of switching elements connected to the same signal line conduct simultaneously in response to said negative signal line selection signal.

21. (Original) The drive circuit according to claim 2, wherein said switching elements are constituted of thin-film transistors.

22. (Original) The drive circuit according to claim 4, wherein said switching elements are constituted of thin-film transistors.

23. (Original) The drive circuit according to claim 8, wherein said switching elements are constituted of thin-film transistors.

24. (Original) The drive circuit according to claim 10, wherein said

switching elements are constituted of thin-film transistors.

25. (Original) The drive circuit according to claim 1, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

26. (Original) The drive circuit according to claim 2, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

27. (Original) The drive circuit according to claim 3, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

28. (Original) The drive circuit according to claim 4, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

29. (Original) The drive circuit according to claim 7, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

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30. (Original) The drive circuit according to claim 8, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

31. (Original) The drive circuit according to claim 9, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

32. (Original) The drive circuit according to claim 10, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

33. (Original) An image display apparatus equipped with the drive circuit according to claim 1, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion

element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

34. (Original) An image display apparatus equipped with the drive circuit according to claim 2, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

35. (Original) An image display apparatus equipped with the drive circuit according to claim 3, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

36. (Original) An image display apparatus equipped with the drive circuit according to claim 4, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on

said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

37. (Original) An image display apparatus equipped with the drive circuit according to claim 7, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

38. (Original) An image display apparatus equipped with the drive circuit according to claim 8, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

39. (Original) An image display apparatus equipped with the drive circuit according to claim 9, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

40. (Original) An image display apparatus equipped with the drive circuit according to claim 10, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, an electro-optical conversion element which changes its light transmittance or emission intensity in response to an electrical signal is placed near each intersection of the signal lines and scanning lines on said substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

41. (Original) An image display apparatus equipped with the drive circuit according to claim 7, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, liquid crystals which change their light transmittance in response to an electrical signal are placed near each intersection of the signal lines and scanning lines on said substrate, said liquid crystals are sandwiched between said substrate and another substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

42. (Original) An image display apparatus equipped with the drive circuit according to claim 8, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, liquid crystals which change their light transmittance in response to an electrical signal are placed near each intersection of the signal lines and scanning lines on said substrate, said liquid crystals are sandwiched between said substrate and another substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

43. (Original) An image display apparatus equipped with the drive circuit according to claim 9, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, liquid crystals which change their light transmittance in response to an electrical signal are placed near each intersection of the signal lines and scanning lines on said substrate, said liquid crystals are sandwiched between said substrate and another substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

44. (Original) An image display apparatus equipped with the drive circuit according to claim 10, wherein a plurality of signal lines for transmitting image signals and a plurality of scanning lines for transmitting scanning signals are formed in a matrix-like fashion in an image display area of a substrate, liquid crystals which change their light transmittance in response to an electrical signal are placed near each intersection of the signal lines and scanning lines on said substrate, said liquid crystals are sandwiched between said substrate and another substrate, said signal lines are connected to said drive circuit, and said scanning lines are connected to a scanning circuit.

45. (Original) The image display apparatus according to claim 41, wherein said switching elements are constituted of thin-film transistors.

46. (Original) The image display apparatus according to claim 42, wherein said switching elements are constituted of thin-film transistors.

47. (Original) The image display apparatus according to claim 43, wherein said switching elements are constituted of thin-film transistors.

48. (Original) The image display apparatus according to claim 44, wherein said switching elements are constituted of thin-film transistors.

49. (Original) The image display apparatus according to claim 41, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

50. (Original) The image display apparatus according to claim 42, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

51. (Original) The image display apparatus according to claim 43, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.

52. (Original) The image display apparatus according to claim 44, wherein said plurality of reference voltages are fewer in number than the gradations of displayed images.